WHAT IS CLAIMED

1. For use with a frame relay network through which virtual circuits are established to enable communications between terminal equipments, a respective terminal equipment being coupled to said frame relay network by way of a processor-controlled frame relay communication device, a processor-executed autoconfiguration routine for automatically configuring said frame relay communication device for operation with said frame relay network comprising the steps of:

(a) during a random time interval, monitoring said frame relay network for a poll from another frame relay communication device;

(b) in response to receiving a poll from another frame relay communication device during the random time interval of step (a), automatically configuring said frame relay communication device as a frame relay access device that uses the signaling protocol in the received poll and exiting said routine; but

(c) in response to the expiration of said random time interval without having received a poll from another frame relay communication device, transmitting one or more polling messages, using different signaling protocols, as necessary, over said frame relay network; and

(d) in response to receiving a response from another frame relay communication device to a polling message transmitted in step (c), automatically

15

configuring said frame relay communication device as a switch mode access device that uses the signaling
30 protocol of the polling message to which a response was received, and exiting said routine.

2. The processor-executed autoconfiguration routine according to claim 1, further comprising the step of:

(e) in response to failing to receive a response
5 from another frame relay communication device to any polling message transmitted in step (c), repeating steps (a)-(d) as necessary, until either a poll or a response to a polling message is received from another frame relay communication device, and configuring said frame relay
10 communication device in accordance with the signaling protocol of the received poll or response.

3. The processor-executed autoconfiguration routine according to claim 2, wherein step (e) comprises repeating steps (a)-(d) using a different random time interval.

5   4. The processor-executed autoconfiguration routine according to claim 1, wherein step (c) comprises transmitting a respective polling message using a respective signaling protocol and waiting for a response thereto during a prescribed time interval and, in
10 response to failing to receive a response to said

respective polling message during said prescribed time interval, transmitting a further polling message using a further signaling protocol.

5.   The   processor-executed   autoconfiguration routine according to claim 4, wherein said respective signaling protocol comprises a selected one of ANNEX D, ANNEX A and GROUP OF 4 signaling protocols, and wherein
5   said further signaling protocol comprises a selected other of said ANNEX D, ANNEX A and GROUP OF 4 signaling protocols.

6.   An   automatic   signaling   role   and   protocol identification and configuration routine that is adapted to be executed by a communications control processor of a frame relay communication device through which frame
5   relay communications may be established with a frame. relay network comprising the steps of:
       (a)   prior to attempting any polling over said frame relay network, establishing a random time interval, during which said frame relay network is monitored for a
10   poll from another frame relay communication device; and
       (b)   in response to receiving a poll from another frame relay communication device during said random time interval of step (a), automatically configuring said frame relay communication device as a frame relay access
15   device that uses the signaling protocol identified in the received poll and exiting said routine.

17

7. The automatic signaling role and protocol identification and configuration routine of claim 6, further comprising the step of:

(c) in response to the expiration of said random
5 time interval without having received a poll from another frame relay communication device, transmitting one or more polling messages, using different signaling protocols, as necessary, over said frame relay network, and automatically configuring said frame relay
10 communication device as a switch mode access device using the signaling protocol of the polling message to which a response to a polling message was received, and exiting said routine.

8. The automatic signaling role and protocol identification and configuration routine of claim 7, further comprising the step of:

(d) in response to failing to receive a response
5 from another frame relay communication device to any polling message transmitted in step (c), repeating steps (a) -(c) as necessary, until either a poll or a response to a polling message is received from another frame relay communication device, and configuring said frame relay
10 communication device in accordance with the signaling protocol of the received poll or response.

18

9. The automatic signaling role and protocol identification and configuration routine of claim 8, wherein step (d) comprises repeating steps (a)-(c) using a different random time interval.

10. The automatic signaling role and protocol identification and configuration routine of claim 8, wherein step (c) comprises transmitting a respective polling message using a respective signaling protocol and

5 waiting for a response thereto during a prescribed time interval and, in response to failing to receive a response to said respective polling message during said prescribed time interval, transmitting a further polling message using a further signaling protocol.

11. The automatic signaling role and protocol identification and configuration routine of claim 9, wherein said respective signaling protocol comprises a selected one of ANNEX D, ANNEX A and GROUP OF 4 signaling

5 protocols, and wherein said further signaling protocol comprises a selected other of said ANNEX D, ANNEX A and GROUP OF 4 signaling protocols.

19